National Institute of Environmental Health Sciences

Co-benefits of large-scale renewables in remote Australia: Energy futures and climate change

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Year: 2011
Journal: Rangeland Journal. 33 (4): 315-325

Abstract:

Desert/remote Australia is blessed with abundant natural energy resources from solar, geothermal and other renewable sources. If these were harnessed and connected appropriately desert/remote Australia could be not only energy self-sufficient but a net exporter. Generation of abundant, clean energy can also attract energy-intensive industries and provide local income and employment. Such co-benefits should be included in any cost-benefit analysis. Regardless of renewable energy's contribution to reducing climate change, the world is already committed to global warming and associated climate changes. Desert/remote Australia will thus inevitably get warmer, with implications for health, energy demand and other issues, and may be subject to increased extremes such as flooding, longer dry spells, more severe storms and coastal inundation. In addition, the prospect of world demand for oil from conventional sources exceeding supply will likely lead to oil shortages, higher oil prices, and additional incentives to provide alternative energy supplies. The region is heavily reliant on diesel generators and fossil fuel-powered motor vehicles and airplanes for transport for within-region mobility, the importation of goods, the tourism industry and emergency medical services. Without adaptation, climate change and peak oil will make living in desert/remote Australia less attractive, resulting in increased difficulty of attracting and retaining skilled workers, which would constrain development. This paper focuses on the climate and energy-related impacts and potential responses. These are both a challenge and an opportunity. They could provide additional employment and income, thus helping remote communities to participate in the clean energy economy of the future and thus overcome some serious social problems. The paper attempts to review current knowledge and provoke debate on relevant investment strategies, and it teases out the questions in need of further research.

Source: http://dx.doi.org/10.1071/rj11012

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Security, Precipitation, Sea Level Rise, Temperature, Unspecified Exposure

Extreme Weather Event: Drought, Flooding, Hurricanes/Cyclones

Temperature: Extreme Cold, Extreme Heat, Fluctuations

Geographic Feature: ☑

resource focuses on specific type of geography

Desert, Rural

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Co-Benefit/Co–Harm (Adaption/Mitigation): ☑

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact: ☑

specification of health effect or disease related to climate change exposure

General Health Impact

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Other Projection Model/Methodology: Discussion only

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: Indigenous populations

Resource Type: ☑

format or standard characteristic of resource

Policy/Opinion

Timescale: ☑

time period studied

Time Scale Unspecified